



Deep Cycle Maintenance Concept

8 February 2010

AMCOM G-3

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Current Situation



- No Cyclic Aviation Sustainment Program Exists to Mitigate Risk Associated With Long Term Effects of Airframe Aging and Use (**Corrosion** and Structural Cracks)
- Scheduled Field/Phase Maintenance
 - Provides Adequate Levels and Frequency of Inspections to Address Safety and Operational Availability Requirements
 - Does Not Address Long Term Effects (Cracking, **Corrosion**) of Aging Process
- Airworthiness Implications

Reset Is the **ONLY** Existing Aviation Field Maintenance Program With Sufficient Disassembly, Inspection, and Repair Capabilities Necessary to Ensure Aircraft Meet Service Life Expectations



Background



- **Reset Process and Field Sustainment Activities Identified [Through Maintenance Engineering Calls (MECs)] **Corrosion and Structural Damage Not Found During Phase Maintenance****
 - Additional Field Level Periodic Disassembly and Inspection Required to Identify and Repair Critical Structural Elements to Ensure Long Term Safety and Operational Availability
 - Reset Process Sufficient for Redeployed Aircraft – Need Process for Non-deployed Aircraft
- **CBM Program Being Implemented But Focused Primarily on Dynamic Components**

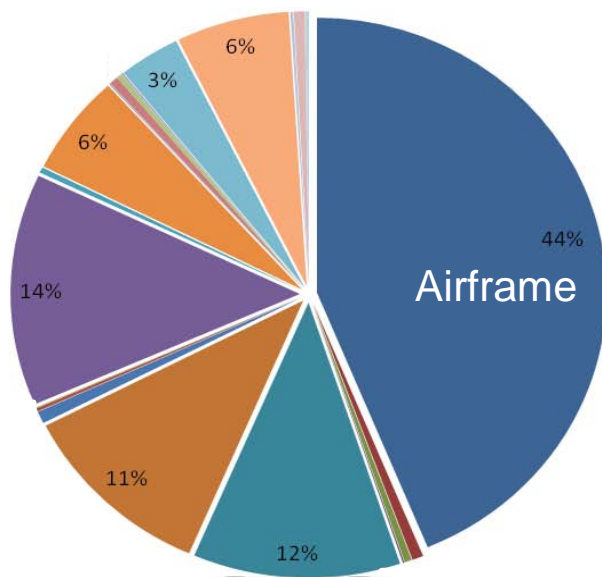
Bottom Line: Data Indicate Current Scheduled Maintenance Measures Not Sufficient to Ensure Aircraft Will Meet Service Life Expectations. A Deep Cycle Maintenance (DCM) Program, “Packaged” With Existing Fleet Sustainment Efforts, Is Required to Mitigate Risk.



Maintenance Engineering Calls (MECs)



**Distribution of MECs By Subsystem
Reset Once**



- AIRFRAME
- ARMAMENT SYSTEM
- AUXILIARY POWER PLANT SYSTEM
- AVIONICS
- BLADES
- DRIVE SYSTEM
- ELECTRICAL SYSTEM
- ENVIRONMENTAL CONTROL SYSTEM
- FIRE CONTROL SYSTEM
- FLIGHT CONTROL SYSTEM
- FUEL SYSTEM
- HYDRAULIC/PNEUDRAULIC
- INSTRUMENT SYSTEM
- LANDING GEAR
- MISSION EQUIPMENT
- PNVS ASSEMBLY
- POWER PLANT
- ROTOR HEAD SYSTEM
- T55
- T700
- TADS ASSEMBLY

**Airframe Structural Issues Represent
Greatest Percentage of Defects/Damage
Found and Accounted for in MECs**

CBM Monitored

Current

- Auxiliary Power Plant System
- Blades
- Drive System
- Power Plant
- Rotor Head System
- T55
- T700

Limited

- Airframe
- Electrical System
- Flight Control System
- Hydraulic/Pneudraulic

Future

- Armament System
- Avionics
- Fire Control System
- Mission Equipment
- PNVS Assembly
- TADS Assembly

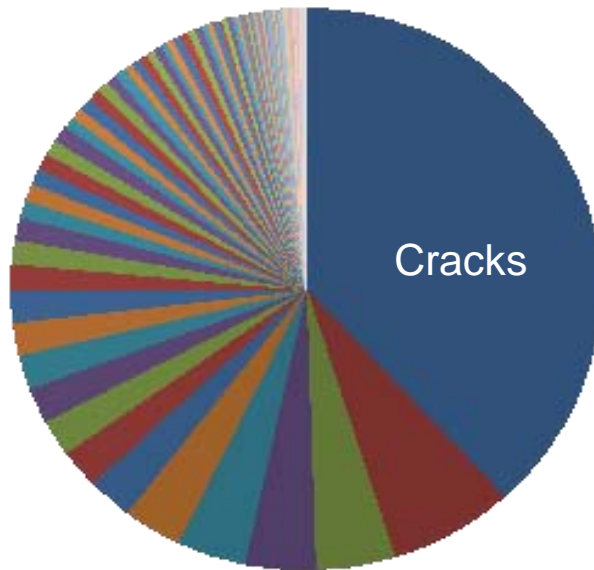
CBM and DCM Are Complementary



Distribution of Airframe MECs



* CBM Monitored



- Cracked
- Over size
- Corrosion
- Gouge
- Voids
- Field Repair
- MFG instruction
- * Alignment improper
- Exceeds Limits
- Delaminated
- * Elongated
- Previous repair
- Unauth. repair
- Dented
- * Mislocated hole
- Contamination
- Damaged limits
- Pitted
- Damaged
- Chafed
- Worn Excessively
- * Elongated holes
- Debonded
- * Bearing or bushing failure
- Corroded
- Modification
- * Loose or missing rivets
- Repair
- Ballistic DMG
- Supply Shortage
- Wear
- Loose
- Broken
- Ballistic Damage
- Hole
- Limits

Ft Rucker Emerging Results

Inducted 2 EH-60s in Reset Since 29 Sep 09:

- 13 MECs Initiated to Date -- 12 Airframe Related

Emerging Results from Ft Rucker Fleet Suggest Numerous Serious Latent Maintenance Issues Remain Undiscovered by Current Field Level Inspections



Deep Cycle Maintenance (DCM) Concept



Scheduled Maintenance Process That Expands Level of Inspections Required by Aviation Platform Maintenance Instructions

- Focused on Structures (Rather Than Components)
- Tailored (Timing/Tasks) for Each Mission Design Series (MDS) Aircraft
 - Additional Tasks Identified by Platform PMs
- Conducted in the Field by Unit or Supporting Maintenance Operations
- Incorporates Disassembly of the Aircraft (Like Reset) and Inspection and Repair of the Airframe as Required
- Scheduled on a Cycle to Be Determined and Synchronized With Scheduled Maintenance Events
- Execution Synchronized With ARFORGEN Requirements

Deep Maintenance = “Phase (+)” or “Reset (-)”
Deep Maintenance Is Not a New Level of Maintenance



Phased Implementation



- **Implementation Would Be Done in Concert With the PMs' Fleet Management Strategy, Synchronized With ARFORGEN and MDS-specific Phase Cycles**
- **FY12-17 Implementation for UH/CH/OH**
 - UH First Requirement: FY12
 - CH Applicable for F-model Only: First Aircraft FY16
 - OH Partial Implementation FY16
 - Tech Pub/Tech Bulletin Study/Development FY10-11
- **Full Implementation Following Recap/Reman Programs for AH**
 - AH: DCM Following Completion of Reman Program (Block II, Block III Upgrades): First Aircraft FY18
- **Implementation for LUH TBD**
 - DCM Intended to Offset Effects of Aging – Data Collection / Analysis Required Before Implementation Date Determined



Summary



- **DCM Addresses Long Term Effects (Cracking, Corrosion) of Aging Aircraft**
- **Mitigates the Risk to Ensure that Aircraft Meet Service Life Expectations**
- **Expands Aircraft Field Maintenance/Phase Inspections – DCM Is Not a New Level of Maintenance**

***Deep Cycle Maintenance Provides The Right Mix
– Airworthiness, Risk, Readiness***



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